Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-20. (Cancelled)

21. (New) A microfluidic mixer for mixing fluid streams within a combined fluid stream wherein mixing is affected by the flowing of the fluids through separate microfluidic channels, the mixer comprising:

an inlet channel for receiving the combined fluid stream, a first intermediate channel defining a first flow path, a second intermediate channel defining a second flow path, and an output channel wherein at least one of the flow paths is a helical flow path having a chirality; and

a plurality of separate microfluidic elements including a splitter element connected to the inlet channel and the intermediate channels to split the combined fluid stream flowing in the inlet channel into a first fluid stream flowing in the first channel and a second fluid stream flowing in the second channel, at least one mobius-like element connected to the inlet channel to helically rotate the first fluid stream relative to the second fluid stream and wherein a relative degree of rotation is greater than $\pi/_2$ and less than 2π to fold the fluid streams, and a combination element connected to the intermediate channels and the outlet channel to combine the first and second fluid streams to obtain a recombined fluid stream wherein the microfluidic elements define a fluidic, flow-folding, mobius-like, topologic structure.

22. (New) The mixer as claimed in claim 21 wherein each of the flow paths is a helical flow path having a chirality wherein the chirality of the first flow path is opposite the chirality of the second flow path and wherein the elements include a first mobius-like element connected to the inlet channel and the first channel to helically rotate the first fluid stream to travel along a first helical fluid path and a second mobius-like element connected to the inlet channel and the second channel to helically rotate the second fluid stream to travel along the second helical flow path.

23. (New) A microfluidic chip comprising:

a substrate; and

a microfluidic mixer supported on the substrate for mixing fluid streams within a combined fluid stream wherein mixing is affected by the flowing of the fluids through separate microfluidic channels, the mixer including an inlet channel for receiving the combined fluid stream, a first intermediate channel defining a first flow path, a second intermediate channel defining a second flow path, and an output channel wherein at least one of the flow paths is a helical flow path having a chirality; a plurality of separate microfluidic elements including a splitter element connected to the inlet channel and the intermediate channels to split the combined fluid stream flowing in the inlet channel into a first fluid stream flowing in the first channel and a second fluid stream flowing in the second channel, at least one mobius-like element connected to the inlet channel to helically rotate the first fluid stream relative to the second fluid stream and wherein a relative degree of rotation is greater than $\pi/_2$ and less than 2π to fold the fluid streams and a combination element connected to the intermediate channels and the outlet channel to combine the first and second fluid streams to obtain a recombined fluid stream wherein the microfluidic elements define a fluidic, flow-folding, mobius-like, topologic structure.

24. (New) The chip as claimed in claim 23 wherein each of the flow paths is a helical flow path having a chirality wherein the chirality of the first flow path is opposite the chirality of the second flow path and wherein the elements include a first mobius-like element connected to the inlet channel and the first channel to helically rotate the first fluid stream to travel along a first helical fluid path and a second mobius-like element connected to the inlet channel and the second channel to helically rotate the second fluid stream to travel along the second helical flow path.